

ENGIE Refrigeration supplies the right cooling for every process: from efficient chillers, environmentally friendly heat pumps and modular re-cooling systems to turnkey solutions such as refrigeration containers or modules. Efficiency, sustainability, cost effectiveness and first-class expertise in technical solutions are hallmarks of every ENGIE Refrigeration project. Our individualised advice and comprehensive services are centred around our customers and their requirements. As a member of the worldwide ENGIE Group, we have a global network of specialists at our disposal and can realise our refrigeration solutions both at home and abroad.

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# Cooling Towers

Energy-efficient solutions for open circuit, closed circuit and double-cell cooling towers.

Optimal use of energies.

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# ENGIE Refrigeration cooling towers are good for circulation

## Non-corrosive, energy-efficient and resource-saving.

As our customer, we know that only one thing matters to you: to get the best temperature for your process. Our mission is to provide the required “chill factor” as efficiently as possible.

We built our first cooling tower in 1957, and have worked with our customers to plan and design a large number of cooling tower systems ever since. Our service portfolio encompasses the entire field of cooling tower engineering, from detailed 3D-CAD design, to simulations of cooling towers, and profitability analyses.

Your cooling towers will be provided according to your criteria regarding cooling capacity, power consumption and noise level. We plan the details for you, and monitor the installation and entry into service.

Our extensive service network always ensures rapid maintenance and spare parts supply. Once your cooling tower is in service, we will support you with our comprehensive service and training throughout the system’s lifespan.

✔ Figure 1  
VENTUM Compact Series,  
cooling tower model  
VENTUM Compact 680:  
Please see pages 6/7  
for further details.



✔ Figure 2  
VENTUM Compact-D-EC Series,  
cooling tower model VENTUM Compact-  
D-EC 930: Please see pages 14/15 for  
further details.



✔ Figure 3  
VENTUM Compact Dual Series,  
cooling tower model VENTUM Compact  
Dual 2500-80: Please see pages 20/21  
for further details.




# Overview of our range

## VENTUM Open circuit, wet evaporative cooling towers

Both open and closed circuit evaporative cooling towers are available. The water which needs to be cooled only comes into contact with the air in open circuit cooling towers. This is not the case with closed circuit cooling towers.


	<p><b>VENTUM Compact Series</b></p> <p>VENTUM Compact cooling towers are true all-rounders, with a wide range of applications. They are available in many sizes and with different power ratings.</p> <p style="text-align: right;">Page 6</p>
	<p><b>VENTUM Modupol Series</b></p> <p>For systems with a high cooling demand of up to 3,600 m<sup>3</sup> of water per hour.</p> <p style="text-align: right;">Page 8</p>
	<p><b>VENTUM Compact-D</b></p> <p>Especially for use in noise-sensitive areas.</p> <p style="text-align: right;">Page 10</p>
	<p><b>VENTUM Compact-D-EC Series</b></p> <p>Forced-draught open circuit cooling towers. Cooling power up to 30 MW.</p> <p style="text-align: right;">Page 12</p>
	<p><b>VENTUM Compact-E Series</b></p> <p>Pressure-ventilated open circuit cooling towers. Cooling power up to 30 MW.</p> <p style="text-align: right;">Page 14</p>

## VENTUM Closed circuit, wet evaporative cooling towers


	<p><b>VENTUM Compact-F Series</b></p> <p>Forced-draught closed circuit cooling towers. Cooling power up to 30 MW.</p> <p style="text-align: right;">Page 16</p>
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## VENTUM Double-cell cell cooling towers

When cooling with a double cell system in the summer, the evaporation heat of the water is used; and in the winter, the heat of the temperature difference is emitted into the air. On cooler days, the system operates like a pure dry cooler, and the heat transfer surface only gets wet during periods of high ambient air pressure.

	<p><b>VENTUM Compact Dual Series</b></p> <p>Double cell cooling towers for closed circuit cooling towers with axial fans.</p> <p style="text-align: right;">Page 18</p>
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## VENTUM Cooling towers for hire

	<p><b>VENTUM Cooling towers for hire</b></p> <p>Installed quickly and reliably in the event of capacity constraints or failure.</p> <p style="text-align: right;">Page 20</p>
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# VENTUM Compact Series

Evaporative cooling tower in a compact, non-corrosive, solid plastic structure.

## Components

### Casing

The casing is available with or without a water basin, and is made of fibreglass-reinforced polyester. The screws are made of stainless steel. The standard colour is blue, RAL 5015. Other RAL colours are available on request.

### Axial ventilation fan

The blades are made of fibreglass-reinforced plastic or aluminium, and are adjustable when stationary. In models up to VENTUM Compact 450, the axial ventilation fan and the electric motor are directly connected. From model VENTUM Compact 680 onwards, it is driven by the gear motor.

### Drift eliminator

Profiled plastic elements prevent water droplets from entering the airflow.

### Water distribution system

Self-cleaning, full-cone plastic nozzles are attached onto the water distribution pipes.

### Cooling components

The cooling components are designed using rot-proof, temperature-resistant plastic packing.

### Louvres

The air inlet louvres are made of plastic, and prevent water from spurring out. They can easily be dismantled for inspection and cleaning purposes.

### Sieve basket strainer

The sieve basket strainer is attached to the lower shell before use, and prevents dirt from entering the water cycle.

### Float valve

The float valve supplies additional water.

## Accessories

- Air intake and outlet silencers
- Sound insulation matting to reduce water impact
- Aluminium ladder and maintenance platform, both with safety rails
- Thermostat to alter the fan speed, depending on the cold water temperature
- Heating, which keeps the water drainage zone ice-free in the winter
- Thermostat to alter the level of heat, depending on the cold water temperature
- Repair switch
- Exterior water distribution pipe
- Sieve basket strainer
- Float valve

## Advantages

- Wide range of services, different sizes, and economic power levels
- Non-corrosive, long life and light weight, as only fibreglass-reinforced polyester is used
- Low energy consumption and easy maintenance due to induced draught ventilators
- Long maintenance intervals
- Simple and economical installation, with pre-assembled units which are suitable for transportation
- Stylish design and various RAL colours, allowing harmonious integration into and adaptation to existing buildings

## VENTUM Compact Series Technical data

VENTUM Compact	Water flow rate m <sup>3</sup> /h		Cooling capacity in kW WBT = 21°C		Motor power in kW	Dimensions in mm			Weight in kg	
	Minimum	Maximum	32/26°C	40/25°C		Length	Width	Height	Empty	In operation
230/06	11	70	240	335	2,2	1520	1520	3265	380	1200
230/09	11	70	280	400	2,2	1520	1520	3265	400	1300
324/06	16	100	350	480	3	1825	1825	3929	610	1420
324/09	16	100	400	570	3	1825	1825	3929	645	1520
450/06	20	135	480	660	4	2220	2220	3780	850	2800
450/09	20	135	590	840	5,5	2220	2220	3780	900	3000
680/06	35	200	760	1110	5,5	3110	2360	4200	1350	4400
680/09	35	200	870	1320	7,5	3110	2360	4500	1450	4700
680/12	35	200	950	1360	9,5	3110	2360	4800	1550	4900
930/09	45	280	1140	1770	11	4235	2360	5100	1650	5850
930/12	45	280	1220	2050	11	4235	2360	5450	1750	6200
930/15	45	280	1290	2060	15	4235	2360	5950	1900	6500
1260/06	65	380	1390	2040	11	4288	3138	5044	2325	8000
1260/09	65	380	1680	2420	15	4288	3138	5044	2450	8400
1800/06	90	540	2080	2910	18,5	4288	4336	5187	3225	11200
1800/09	90	540	2390	3460	22	4288	4336	5187	3400	11800

The nominal cooling capacities given in the table apply to the cooling of water from 32°C to 26°C, and from 40°C to 25°C at a wet bulb temperature (WBT) of 21°C. The minimum and maximum flow rates do not apply to the nominal cooling capacities.



Figure 4  
VENTUM Compact Series, cooling tower, model VENTUM Compact 930

# VENTUM Modupol Series

Open circuit, non-corrosive plastic cooling tower with axial ventilation fan.

## Components

### Casing

The modular casing is made of three kinds of fibreglass-reinforced polyester. The screws are made of stainless steel. The standard colour is blue, RAL 5015. Please see pages 24/25 for 3D CAD drawings of various VENTUM Modupol versions.

### Axial ventilation fan

The blades are made of fibreglass-reinforced plastic or aluminium, and are adjustable when stationary. It is driven by geared motors with one or two rotational speeds. A protective grille covers the fan.

### Drift eliminators

Profiled plastic elements prevent water droplets from entering the airflow.

### Water distribution system

Self-cleaning, full-cone plastic nozzles are attached onto the water distribution pipes.

### Cooling components

The cooling components are designed using rot-proof, temperature-resistant plastic packing materials.

### Louvres

The air inlet louvres are made of plastic, and prevent water from spurring out. They can easily be dismantled for inspection and cleaning purposes.

## Accessories

- Air intake and outlet silencers
- Sound insulation matting to reduce water impact
- Aluminium ladder and steps, both with safety rails and direct access to the gear motor
- Exterior water distribution pipe
- Thermostat to alter the fan speed, depending on the cold water temperature
- Heating, which keeps the water drainage zone ice-free in winter
- Thermostat to alter the level of heat, depending on the cold water temperature
- Sieve basket strainer for water drainage
- Oil level monitoring

## Advantages

- Non-corrosive, long life and light weight, as only fibreglass-reinforced polyester is used
- Very high cooling capacity, re-cooling up to 3,600 m<sup>3</sup> of water per hour. Even greater demands can be met through the linear arrangement of multiple cooling towers.
- Individual systems in a modular system with several variants and modular designs, with an optional water basin
- Low energy consumption and easy maintenance due to induced draught ventilators
- Long maintenance intervals
- Simple and economical assembly and factory-installed elements

## VENTUM Modupol Series Technical data

	VENTUM Modupol	Water flow rate m <sup>3</sup> /h		Cooling capacity in kW WBT = 21°C		Motor power in kW	Dimensions in mm			Weight in kg	
		Minimum	Maximum	32/26°C	40/25°C		Length	Width	Height	Empty	In operation
single-cell	2100/09	105	630	2500	3620	18,5	4650	4740	6205	3500	5200
	2100/12	105	630	2700	4040	22	4650	4740	6505	3700	5800
	3100/09	155	930	3750	5430	30	4650	7040	6425	4600	7100
	3100/12	155	930	4040	6060	30	4650	7040	6725	4850	7750
	4500/09	225	1350	5620	8140	36	6950	7040	6825	6900	10700
	4500/12	225	1350	6060	9080	45	6950	7040	7125	7250	11900
	6100/09	310	1860	7490	10850	50	9250	7040	7625	10300	15400
	6100/12	310	1860	8090	12100	58	9250	7040	7925	10750	17000
double-cell	4200/09	210	1260	5000	7240	2 x 18,5	9260	4740	6205	6900	10300
	4200/12	210	1260	5400	8080	2 x 22	9260	4740	6505	7200	11400
	6200/09	310	1860	7500	10860	2 x 30	4650	7040	6725	9200	14200
	6200/12	310	1860	8080	12120	2 x 30	4650	7040	7025	9600	15800
	9000/09	450	2700	11240	16280	2 x 36	6950	7040	7125	13600	21100
	9000/12	450	2700	12120	18160	2 x 45	6950	7040	7425	14150	23400
	12200/09	610	3660	14980	21700	2 x 50	9250	7040	7925	20400	30700
	12200/12	610	3660	16180	24200	2 x 58	9250	7040	8225	21100	33800

The nominal cooling capacities given in the table apply to the cooling of water from 32°C to 26°C, and from 40°C to 25°C at a wet bulb temperature (WBT) of 21°C. The minimum and maximum flow rates do not apply to the nominal cooling capacities.



Figure 5

Two VENTUM Modupol cooling towers, with special ventilator and air intake and outlet silencer for process water cooling.

# VENTUM Compact-D Series

Quiet evaporative cooling tower, made of corrosion-free galvanised plastic.

## Components

### Casing

The casing and the water basin are made of fibreglass-reinforced polyester. The standard colour is blue, RAL 5015. Other RAL colours are available on request. A stainless steel screen is mounted in front of each water drain. There is an inspection panel for adjusting the float valve and cleaning the filter and water basin.

### Axial ventilation fan

Two-sided absorbent, low-noise, high-performance centrifugal fan made of galvanized steel. The ventilator is driven by a three-phase motor and a V-belt. A protective grille covers all moving parts.

### Drift eliminator

Profiled plastic elements prevent water droplets from entering the airflow.

### Water distribution system

Self-cleaning, full-cone galvanised plastic nozzles are attached onto the water distribution pipes.

### Cooling components

The cooling components are designed using rot-proof, temperature-resistant plastic packing materials.

### Flexible coupling

The ventilator is linked to the casing of the cooling tower, and prevents structure-borne sound transmission.

## Accessories

- Sound proofing Air intake and outlet silencers with casing made of fibreglass-reinforced polyester, with optional grille
- Flexible coupling for connection to air supply and outlet ducts
- Louvres for incoming and outgoing air
- Galvanised steel support frame for the rapid construction of the entire cooling tower
- Float valve for fresh water supply
- Heating, which keeps the water drainage zone ice-free in winter
- Thermostat to alter the fan speed, depending on the cold water outlet temperature
- Thermostat to alter the level of heat, depending on the cold water temperature
- Exterior water dispenser made of fibreglass-reinforced polyester or polypropylene

## Advantages

- Quiet operation due to radial fans
- Increased noise protection due to sound insulation
- Simple and economical installation, due to pre-assembled units or delivery of the assembled support frame
- Accurate size regulation by wide selection of models
- A model for all cooling requirements
- Non-corrosive, long life and light weight, as only fibreglass-reinforced polyester is used
- Waterproof casing made of fibreglass reinforced polyester
- Suitable for use in enclosed areas, due to low noise levels, low overall height and air duct connection possibility
- Long maintenance intervals
- Different RAL colours available, allowing integration into buildings

## VENTUM Compact-D Series Technical Data

	Type	Water flow rate m <sup>3</sup> /h		Cooling capacity in kW WBT = 21°C		Motor power in kW	Dimensions in mm			Weight in kg	
		Minimum	Maximum	32/26°C	40/25°C		Length	Width	Height	Empty	In operation
VENTUM Compact-D	450-2	20	135	485	700	9	3960	2125	2452	770	2870
	450-3	20	135	535	810	14	3960	2125	2452	820	2870
	680-2	35	200	850	1200	11	5300	2280	2490	1500	4300
	680-3	35	200	900	1360	14	5300	2280	2490	1600	4300
	930-2	45	280	1130	1600	14	6550	2280	2490	2100	5500
	930-3	45	280	1280	1890	20	6550	2280	2490	2300	5500
VENTUM Compact-D-A	450-2	20	135	485	700	14	5114	2125	3797	1500	3700
	450-3	20	135	535	810	20	5114	2125	3797	1550	3700
	680-2	35	200	850	1200	14	6420	2280	3830	2450	5410
	680-3	35	200	900	1360	20	6420	2280	3830	2550	5410
	930-2	45	280	1130	1600	24	7700	2280	3830	3250	6850
	930-3	45	280	1280	1890	28	7700	2280	3830	3400	6850

The nominal cooling capacities given in the table apply to the cooling of water from 32°C to 26°C, and from 40°C to 25°C at a wet bulb temperature (WBT) of 21°C. The minimum and maximum flow rates do not apply to the nominal cooling capacities..



Figure 7  
VENTUM Compact-D Series, cooling tower  
VENTUM Compact-D-A 930

# VENTUM Compact-D-EC Series

Energy-optimised evaporative cooling tower with EC fan module and integrated frequency converter.

## Components

### Casing

The casing and the water basin are made of fibreglass reinforced polyester. The standard colour is blue, RAL 5015. Other RAL colours are available on request. A stainless steel screen is mounted in front of each water drain. There is an inspection panel for adjusting the float valve and cleaning the filter and water basin.

### Axial ventilation fan

Single inlet, low-noise, high performance radial fan made of galvanised sheet steel. The power unit is integrated into the directly-driven ventilator fan in the electric motor. A protective grille covers all moving parts. The ventilator fans are built into a non-corrosive blower box. This docks directly onto the cooling tower.

### Drift eliminator

Profiled plastic elements prevent water droplets from entering the airflow.

### Water distribution system

Self-cleaning, full-cone galvanised plastic nozzles are attached onto the water distribution pipes.

### Cooling components

The cooling components are designed using rot-proof, temperature-resistant plastic packing materials.

## Accessories

- Sound proofing Air intake silencers with aluminium casing, and outlet silencers with fibreglass reinforced polyester casing, with optional grille
- Flexible coupling for connection to air supply and exhaust ducts
- Float valve for fresh water supply
- Heating, which keeps the water drainage zone ice-free in the winter
- Thermostat to alter the fan speed, depending on the cold water outlet temperature
- Thermostat to alter the level of heat, depending on the cold water temperature
- Exterior water dispenser made of fibreglass reinforced plastic or polypropylene

## Advantages

- EC fan module with integrated frequency converter ensures optimum energy efficiency
- Higher thermal efficiency due to a laterally docked blower box
- Quiet operation due to radial fans
- Increased noise protection due to sound insulation
- Simple and economical installation, due to pre-assembled units
- Non-corrosive, long life and light weight, as only fibreglass-reinforced polyester is used
- Waterproof casing made of fibreglass reinforced polyester
- Suitable for use in enclosed areas, due to low noise levels, low overall height and air duct
- connection possibility
- Long maintenance intervals
- Different RAL colours available, allowing integration into buildings

## VENTUM Compact-D-EC Series Technical Data

	Type	Water flow rate m <sup>3</sup> /h		Cooling capacity in kW WBT = 21°C		Motor power in kW	Dimensions in mm			Weight in kg	
		Minimum	Maximum	32/26°C	40/25°C		Length	Width	Height	Empty	In operation
VENTUM Compact-D-EC	680/06	35	200	760	1110	11	3375	3600	2980	155	3200
	680/09	35	200	870	1320	11	3375	3600	3280	1650	3400
	680/12	35	200	950	1360	11	3375	3600	3600	1750	3600
	930/09	45	280	1140	1770	16,5	4500	3600	3280	2200	5400
	930/12	45	280	1220	2050	16,5	4500	3600	3600	2300	5700
	930/15	45	280	1290	2060	16,5	4500	3600	4100	2400	6000
VENTUM Compact-D-A-EC	680/06	35	200	760	1110	11	3375	4950	4325	2600	4000
	680/09	35	200	870	1320	11	3375	4950	4625	2700	4100
	680/12	35	200	950	1360	11	3375	4950	4945	2800	4200
	930/09	45	280	1140	1770	16,5	4500	4950	4625	4100	7500
	930/12	45	280	1220	2050	16,5	4500	4950	4945	4200	7800
	930/15	45	280	1290	2060	16,5	4500	4950	5445	4300	8100

The nominal cooling capacities given in the table apply to the cooling of water from 32°C to 26°C, and from 40°C to 25°C at a wet bulb temperature (WBT) of 21°C. The minimum and maximum flow rates do not apply to the nominal cooling capacities..



Figure 8  
VENTUM Compact-D-EC Series,  
cooling tower VENTUM Compact-D-EC 930

# VENTUM Compact-E Series

Open circuit, aerator-pressurised wet cooling tower in stainless steel casing.

## Components

### Casing

The casing is made of stainless steel sheets, which are bolted and sealed together by stainless steel screws. The bottom of the casing is designed with a slope with a 2% gradient, so that the residue or cooling water can be drained from the lowest point of the basin.

### Double-inlet radial fan

A radial fan with forward curved blades made of galvanised steel is mounted onto the cooling tower casing. The fan casing is galvanised. The fan is driven by an IEC v-belt motor.

### Drift eliminator

Profiled plastic elements with a high filtration efficiency level prevent water droplets from entering the air flow.

### Water distribution system

Water distribution system in stainless steel casing with galvanised plastic distribution nozzles.

### Cooling components

The fillers are made of UV-resistant plastic, rot-proof and temperature resistant.

## Accessories

- Fill-level monitoring (analogue or digital)
- Air intake and outlet silencers, with integrated stainless steel protection grille
- Air duct with inspection panel
- Thermostat for fan motor control
- Float valve for fresh water
- Sump heating (electric) with boil-dry protection
- Thermostat to control the sump heater
- Noise insulation with longitudinal damping straps
- Automatic damper in the fan
- Electric multileaf damper in the air inlet and outlet duct
- Flexible connectors for inlet and exhaust air
- Inspection panel for easy access
- Inspection portholes in the casing

## Advantages

- Non-corrosive casing made of stainless steel
- Indoor installation is also possible
- Low space requirements and low height
- Low noise level, due to laterally-arranged radial fans
- Optionally equipped with inlet and outlet air silencers
- Separate driving motor for the fan
- Simple to use and to maintain
- Adjustment to all specified services



Figure 9  
VENTUM Compact-E Series, cooling tower model 400

## VENTUM Compact-E Series Technical Data

	Type	Water flow rate m³/h		Cooling capacity in kW WBT = 21°C		Motor power in kW	Dimensions in mm			Weight in kg		
		Minimum	Maximum	32/26°C	40/25°C		Length	Width	Height	Empty	In operation	
VENTUM Compact-E	single-cell	144	10	41	210	300	3	2830	1250	2295	500	970
		180	12	49	260	360	4	3080	1250	2295	550	1120
		215	16	64	340	470	5,5	3500	1250	2295	660	1400
		290	20	82	430	600	7,5	4420	1250	2295	950	1900
		330	24	99	520	730	11	4920	1250	2295	1050	2200
		400	29	123	640	900	15	5590	1250	2295	1200	2650
	double-cell	500	36	152	800	1120	15	5045	1875	2420	1480	3250
		540	38	162	840	1190	15	5215	1875	2420	1540	3500
		580	41	175	910	1280	18,5	5465	1875	2420	1590	3620
		610	45	189	980	1380	22	5715	1875	2420	1690	3850
		288	24	99	520	730	2 x 4,0	3080	2420	2295	1050	2200
		360	31	129	670	950	2 x 5,5	3500	2420	2295	1240	2730
430		39	164	850	1200	2 x 7,5	4420	2420	2295	1760	3670	
580		47	199	1040	1460	2 x 11,0	4920	2420	2295	1960	4260	
660		58	246	1280	1800	2 x 15,0	5590	2420	2295	2250	5090	
800		72	305	1590	2240	2 x 15,0	5045	3670	2420	2850	6390	
VENTUM Compact-E-A	single-cell	1000	76	324	1690	2370	2 x 15,0	5215	3670	2420	2960	6880
		1080	82	351	1830	2570	2 x 18,5	5465	3670	2420	3050	7110
		1160	89	378	1970	2770	2 x 22,0	5715	3670	2420	3100	7250
		144	10	41	210	300	3	4090	1250	4215	1080	1550
		180	12	49	260	360	4	4340	1250	4215	1180	1750
		215	16	64	340	470	7,5	4760	1250	4215	1350	2090
	double-cell	290	20	82	430	600	7,5	5680	1250	4215	1680	2630
		330	24	99	520	730	11	6180	1250	4215	1870	3020
		400	29	123	640	900	15	6850	1250	4215	2100	3550
		500	36	152	800	1120	15	6305	1875	4340	2500	4270
		540	38	162	840	1190	18,5	6475	1875	4340	2575	4535
		580	41	175	910	1280	18,5	6725	1875	4340	2660	4690
610		45	189	980	1380	28	6975	1875	4340	2840	5000	
288		24	99	520	730	2 x 4,0	4340	2420	4215	2030	3180	
360		31	129	670	950	2 x 7,5	4760	2420	4215	2300	3790	
430		39	164	850	1200	2 x 7,5	5680	2420	4215	2900	4810	
double-cell	580	47	199	1040	1460	2 x 11,0	6180	2420	4215	3210	5510	
	660	58	246	1280	1800	2 x 15,0	6850	2420	4215	3590	6430	
	800	72	305	1590	2240	2 x 15,0	6305	3670	4340	4635	8175	
	1000	76	324	1690	2370	2 x 18,5	6475	3670	4340	4770	8690	
	1080	82	351	1830	2570	2 x 18,5	6725	3670	4340	4925	8985	
	1160	89	378	1970	2770	2 x 28,0	6975	3670	4340	5050	9200	

The nominal cooling capacities given in the table apply to the cooling of water from 32°C to 26°C, and from 40°C to 25°C at a wet bulb temperature (WBT) of 21°C. The minimum and maximum flow rates do not apply to the nominal cooling capacities.



# VENTUM Compact-F Series

Pressurised, closed circuit evaporative cooling tower with lateral radial fan.

## Components

### Casing

The casing is made of stainless steel sheets, which are bolted and sealed together by stainless steel screws.

The bottom of the casing is designed with a slope with a 2% gradient, so that the residue or cooling water can be drained from the lowest point of the basin.

### Double-inlet radial fan

A radial fan with forward curved blades made of galvanised steel is mounted onto the cooling tower casing. The fan casing is galvanised. The fan is driven by an IEC v-belt motor.

### Drift eliminator

Profiled plastic elements with a high filtration efficiency level prevent water droplets from entering the air flow.

### Water distribution system

Water distribution system in stainless steel casing with galvanised plastic distribution nozzles.

### Cooling components

For heat transfer, slightly inclined galvanised tube heat exchangers are built into the casing on a stainless steel support structure. The heat exchangers are connected to the customer's pipe network by means of pipe couplings.



## Accessories

- Fill-level monitoring (analogue or digital)
- Air intake and outlet silencers, with integrated stainless steel protection grille
- Air duct with inspection panel
- Thermostat for fan motor control
- Float valve for fresh water
- Sump heating (electric) with boil-dry protection
- Thermostat to control the sump heater
- Noise insulation with longitudinal damping straps
- Automatic damper in the fan
- Electric multileaf damper in the air inlet and outlet duct
- Flexible connectors for inlet and exhaust air
- Inspection panel for easy access
- Revision hatch near to the heat exchanger

## Advantages

- Non-corrosive casing made of stainless steel
- Indoor installation is also possible
- At part load and low external temperatures, the cooling tower can be operated without water spray
- Low space requirements and low height
- Low noise level, due to laterally-arranged radial fans
- Optionally equipped with inlet and outlet air silencers
- Separate driving motor for each fan
- Simple to use and to maintain
- Good accessibility to valves and pumps
- Adjustment to all specified services
- No pollution or oxygen absorption into the circulating water
- External tube heat exchanger made of hot-dip galvanised steel
- Fully-piped spray circuit, with external pump

✓ Figure 10

Vented pressure evaporated cooling tower from the VENTUM Compact-F Series. Closed circuit, with side-mounted radial fan.

## VENTUM Compact-F Series Technical Data

	Type	Water flow rate m <sup>3</sup> /h		Cooling capacity in kW WBT = 21°C		Motor power in kW	Dimensions in mm			Weight in kg		
		Minimum	Maximum	32/26°C	40/25°C		Length	Width	Height	Empty	In operation	
VENTUM Compact-F	single-cell	216-10	12	98	190	110	5,5	3500	1250	2420	1650	2750
		216-14	12	98	230	120	7,5	3500	1250	2920	2050	3250
		290-10	12	98	250	160	7,5	4000	1250	2420	2000	3300
		290-14	12	98	300	220	11	4000	1250	2920	2400	3900
		335-10	12	98	310	230	11	4920	1250	2545	2500	4100
		335-14	12	98	360	280	18,5	4920	1250	3155	3050	4850
		410-10	12	98	400	330	15	5590	1250	2545	2900	4850
		410-14	12	98	470	390	18,5	5590	1250	3155	3550	5750
	double-cell	480-10	12	98	470	400	15	6090	1250	2545	3200	5400
		480-14	12	98	540	470	22	6090	1250	3155	3950	6400
		432-10	23	196	370	220	2 x 5,5	3500	2420	2420	3250	5350
		432-14	23	196	450	250	2 x 7,5	3500	2420	2920	3950	6350
		580-10	23	196	500	330	2 x 7,5	4000	2420	2420	3800	6450
		580-14	23	196	590	430	2 x 11,0	4000	2420	2920	4650	7650
670-10		23	196	610	450	2 x 11,0	4920	2420	2545	4750	7950	
670-14		23	196	710	550	2 x 18,5	4920	2420	3155	5800	9400	
VENTUM Compact-F-A	single-cell	820-10	23	196	810	650	2 x 15,0	5590	2420	2545	5500	9400
		820-14	23	196	930	780	2 x 18,5	5590	2420	3155	6800	11200
		960-10	23	196	940	790	2 x 15,0	6090	2420	2545	6050	10450
		960-14	23	196	1080	930	2 x 22,0	6090	2420	3155	7500	12450
		216-10	12	98	190	110	5	4760	1250	4340	2350	3450
		216-14	12	98	230	120	11	5260	1250	4340	2750	3950
	double-cell	290-10	12	98	250	160	11	6180	1250	4465	2700	4050
		290-14	12	98	300	220	15	6860	1250	4465	3150	4650
		335-10	12	98	310	230	18,5	7350	1250	4465	3350	4950
		335-14	12	98	360	280	11	4760	1250	4840	3850	5700
VENTUM Compact-F-A	single-cell	410-10	12	98	400	330	15	5260	1250	4840	3800	5750
		410-14	12	98	470	390	18,5	6180	1250	4840	4450	6650
		480-10	12	98	470	400	22	6860	1250	4840	4150	6350
		480-14	12	98	540	470	28	7350	1250	4840	4900	7400
		432-10	23	196	370	220	2 x 5,0	4760	2420	4340	4250	6400
		432-14	23	196	450	250	2 x 11,0	5260	2420	4340	5000	7400
		580-10	23	196	500	330	2 x 11,0	6180	2420	4465	4850	7600
		580-14	23	196	590	430	2 x 15,0	6860	2420	4465	5750	8750
	double-cell	670-10	23	196	610	450	2 x 18,5	7350	2420	4465	6000	9250
		670-14	23	196	710	550	2 x 11,0	4760	2420	4840	7050	10650
		820-10	23	196	810	650	2 x 15,0	5260	2420	4840	6800	10800
		820-14	23	196	930	780	2 x 18,5	6180	2420	4840	8100	12550
		960-10	23	196	940	790	2 x 22,0	6860	2420	4840	7400	11900
		960-14	23	196	1080	930	2 x 28,0	7350	2420	4840	8900	13900

The nominal cooling capacities given in the table apply to the cooling of water from 32°C to 26°C, and from 40°C to 25°C at a wet bulb temperature (WBT) of 21°C. The minimum and maximum flow rates do not apply to the nominal cooling capacities.

# VENTUM Compact Dual Series

Closed circuit dual cooling tower with axial fans.

## Components

### Casing

Non-corrosive stainless steel support structure.

### Axial ventilation fan

The inlet axial flow fans are driven by external rotor motors by default, or optionally driven directly with geared motors.

### Heat exchangers

The heat exchangers are in a v-shaped structure and consist of copper tubes with aluminium slats, arranged in a stainless steel frame. The slats are covered with a hydrophilic coating.

### Water distribution system

Low pressure spraying system ( $\leq 3.5$  bar), consisting of stainless steel tubes and spray nozzles made of plastic, for direct spraying onto the blades. Includes pre-filter, control valves and manually operated drain valve.

## Accessories

- Three-dimensional, curved axial impellers for noise reduction, equipped with guard screen on the air outlet side
- Restraint system
- Optional drip tray for excess water or rain water
- Non-slip coating
- Hygienic design
- Temperature sensor
- Thermostat
- Vibration control

## Advantages

- Non-corrosive casing made of stainless steel
- Quiet axial fans with high efficiency
- Separate drive for each fan, for optimum reliability
- Double-cell cooling towers can dissipate the heat both in wet and dry conditions
- Low water and electricity requirements
- No swath formation

## VENTUM Compact Dual Series Technical Data

VENTUM Compact Dual	Water flow rate m <sup>3</sup> /h (ethylene glycol 35%)		Cooling capacity in kW WBT = 21°C		Motor power in kW	Dimensions in mm			Weight in kg	
	Minimum	Maximum	32/26°C	40/25°C		Length	Width	Height	Empty	In operation
625-58	23	70	420	550	7,5	3500	2475	3355	3500	4000
1250-58	47	140	830	1130	15	6000	2475	3355	5750	6750
1875-58	93	280	1020	1520	22,5	8500	2475	3355	8000	9500
2500-58	93	280	1630	2270	30	11000	2475	3355	10500	12250
625-80	32	96	580	760	11	3500	3460	3975	4250	4750
1250-80	64	192	1150	1570	22	6000	3460	3975	7000	8250
1875-80	128	384	1400	2050	33	8500	3460	3975	10000	11750
2500-80	128	384	2250	3100	44	11000	3460	3975	13000	15000

The nominal cooling capacities given in the table apply to the cooling of water from 32°C to 26°C, and from 40°C to 25°C at a wet bulb temperature (WBT) of 21°C. The minimum and maximum flow rates do not apply to the nominal cooling capacities



Figure 11  
VENTUM Compact Dual Series, cooling tower  
model VENTUM Compact Dual 2500-58

# VENTUM

## Cooling towers for hire

Installed quickly and reliably in the event of capacity constraints or failures.

Hiring a cooling tower has many advantages. If the present cooling capacity is no longer sufficient for seasonal demand or production peaks, or if the system fails, rapid assistance is required. Increasing the cooling capacity by expanding the current system is often not worthwhile. The hireable cooling tower, model VENTUM Compact-D 930 MC is the perfect solution. The hireable cooling tower is ready for use within 24 hours.

The VENTUM Compact-D 930 MC is a ready-to-install cooling tower, which is built into a robust container frame. This design allows for easy transportation and so ensures flexible use. The hireable cooling tower complies with all the current requirements of the industrial sector. It is equipped with a conventional control that regulates the cold water temperature of the cooling tower basin. The control also provides a signal to activate the protection against dry running for an external pump module. Each screen displays a water inlet and outlet temperature. For winter use, the device is equipped with a heater and dry-running protection.

Figure 12  
VENTUM Compact-D 930 MC - a ready-to-install cooling tower module



### Product Characteristics

- Non-corrosive, solid plastic cooling tower
- Rugged industrial quality design
- High serviceability and user-friendliness

### Options

- Integrated desalination system
- Ladder
- Pump module
- Customer-specific adjustments

### Dimensions

- L/W/H 6.058 m x 2.438 m x 2.896 m
- Transport weight: 4,000 kg
- Operating weight: 8,500 kg

### Connections

Water pipe connections:

- Cooling tower flow 2 x storz A according to DIN 14309; 100 mm diameter
- Cooling tower return 4 x storz A according to DIN 14309; 100 mm diameter
- GEKA fresh water supply

Electrical connections:

- 1 x CECON 400 V/63 A
- Starting current 80/380 A
- Consumption in operation 13/49 A

## Close to you around the clock

Problems with cooling technology do not stick to office hours. Which is why our service team is there for you 24 hours a day.

Our distribution centre and the local stocks in the service offices guarantee that you are supplied quickly with original spare parts of all the usual brands – with short delivery routes and extremely fast response times.

### We can do a lot for you:



24/7 troubleshooting



Monitoring



Remote maintenance



Modular maintenance



Upgrading services



Efficiency check



Training



Repairs

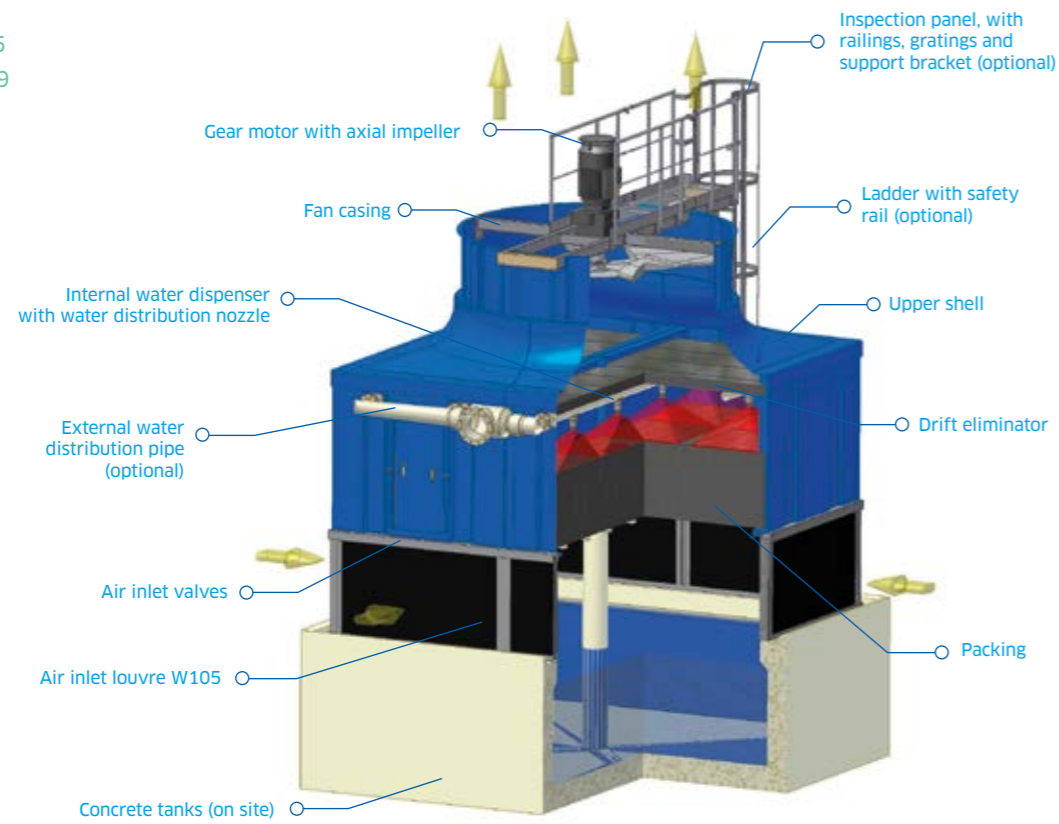


Consulting and planning

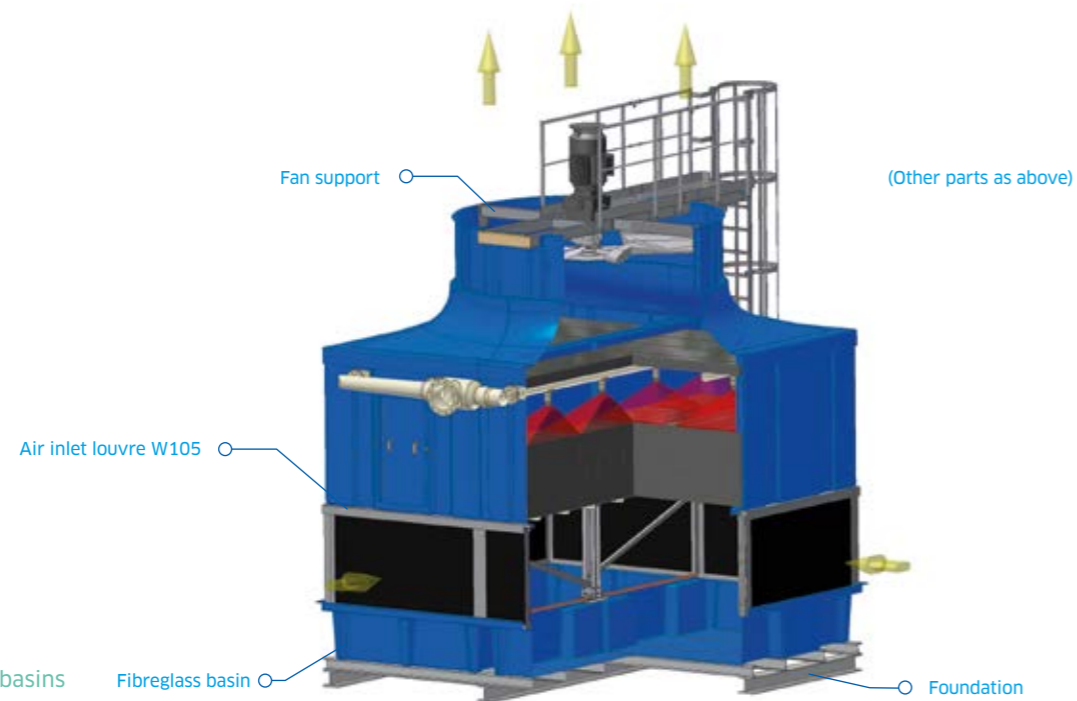
# 3D CAD drawings

## Cross-sectional diagram VENTUM Modupol

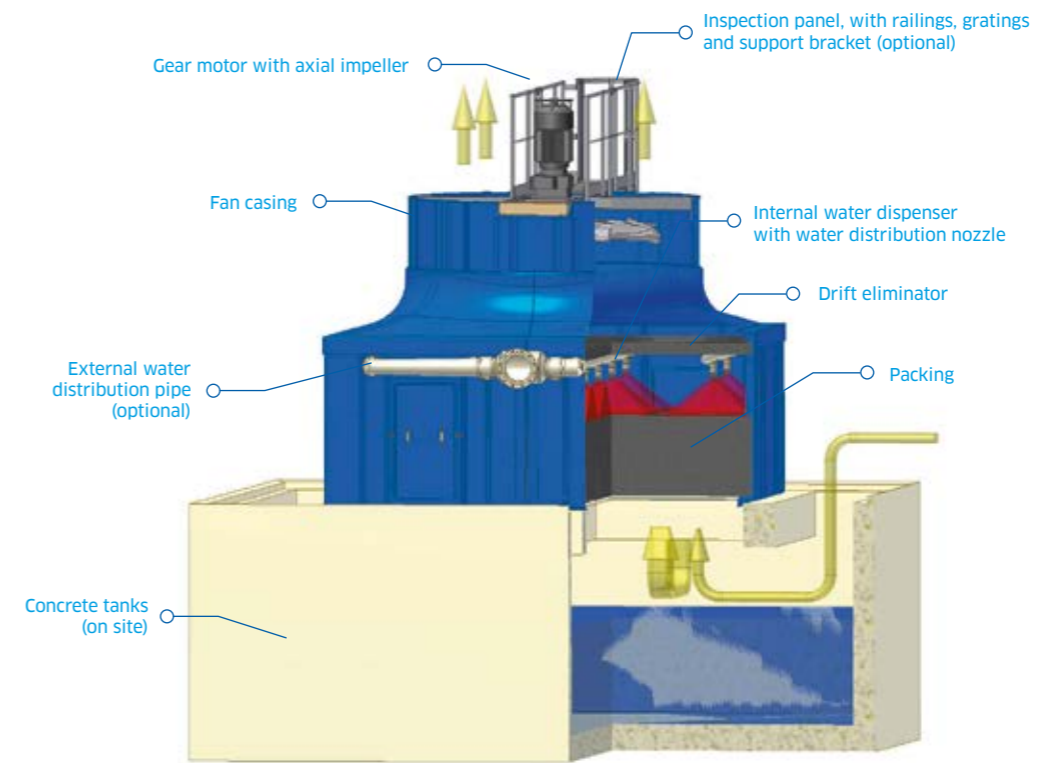
✓ Figures 13, 14 und 15  
VENTUM Modupol 2100/09  
Please see pages 8/9  
for further details



Variant 1:  
with air inlet valves



Variant 2:  
with air inlet valves  
and fibreglass storage basins



Variant 3:  
With air inlet valves underneath

## Cross-sectional diagram VENTUM Compact

✓ Figure 16  
VENTUM Compact 680/09.  
Please see pages 6/7  
for further details

